OCR Computer Science AS Level 1.3.2 Networks

Flashcards

What is a network?

What is a network?

Two or more computers connected together that transmit data

What are protocols?

What are protocols?

Sets of rules defining how two devices communicate with each other

Why are protocols standard?

Why are protocols standard?

Protocols are standard so devices from different manufacturers don't have problems communicating

Describe the structure of the Internet

Describe the structure of the Internet

The Internet is a global network of interconnected networks

What does TCP stand for?

What does TCP stand for?

Transmission Control Protocol

What does IP stand for?

What does IP stand for?

Internet Protocol

What is the function of the application layer during data transmission?

What is the function of the application layer during data transmission?

The Application Layer specifies what protocols need to be used to relate the application to what it's being used for.

What is the role of the transport layer during data transmission?

What is the role of the transport layer during data transmission?

Establishes an end-to-end connection between the source and recipient computers. It also splits up the data into packets.

What is the role of the network layer during data transmission?

What is the role of the network layer during data transmission?

Adds the source and destination IP address.

What does the application layer do when it receives data?

What does the application layer do when it receives data?

Presents data in the form it was sent

What does the transport layer do when it receives the data?

What does the transport layer do when it receives the data?

Removes the port number and reassembles the packets.

What does the network layer do when it receives the data?

What does the network layer do when it receives the data?

Removes the IP address

What does the link layer do when it receives the data?

What does the link layer do when it receives the Data?

Removes the MAC addresses

What is a Local Area Network?

What is a Local Area Network?

A network spread over a small geographical area/ positioned on a single site

What is a wide area network?

What is a Wide Area Network?

A network spread over a large geographical area, usually requiring extra hardware.

What does DNS stand for?

What does DNS stand for?

Domain Name System

What is DNS?

What is DNS?

The name given to the method of naming internet resources. (.com, .uk etc)

What is circuit switching?

What is circuit switching?

The process of creating a direct link between two devices and transferring data the entire duration of the link.

What is a requirement of circuit switching?

What is a requirement of Circuit Switching?

The transfer and download rates must be identical on both devices.

What is packet switching?

What is packet switching?

A method of communicating packets of data across a network

Give an advantage of packet switching

Give an advantage of packet switching

- Multiple methods to ensure data arrives correctly,
- Multiple methods to arrive to destination, if one breaks you can always go through another route.
- Transfer packets over a very large network

Give a disadvantage of packet switching

Give a disadvantage of packet switching

- Time is spent deconstructing and reconstructing the packets

Give an advantage of circuit switching

Give an advantage of circuit switching

- Data arrives in logical order which results in a quicker reconstruction of data,
- Enables two users to hold a call without any delay in speech.

Give two disadvantages of circuit switching

Give two disadvantages of circuit switching

- Bandwidth is wasted during periods when no data is sent
- Devices must transfer and download at the same rate
- Switches introduce electrical interference which can corrupt or destroy data

What does the header of a data packet contain?

What does the header of a data packet contain?

- The sender and recipient IP addresses
- Protocols being used
- Order of the packets
- The time to live / hop limit

What does the packet payload contain?

What does the packet payload contain?

The raw data

What does the packet trailer contain?

What does the packet trailer contain?

The checksum or cyclic redundancy check

What is client-server networking?

What is client-server networking?

A relationship between terminals (computers) and a single server which allows them to communicate, and share resources.

Give an advantage of client-server networking

Give an advantage of client-server networking

- Increased security
- Central single backups
- Data and resources can be shared

Name a disadvantage of client-server networking

Name a disadvantage of client-server networking

- Expensive to set up
- Trained staff are required to maintain the network

What is peer-to-peer Networking?

What is peer-to-peer Networking?

A network where the terminals are all connected to each other to share resources.

Give two advantages of peer-to-peer networks

Give two advantages of peer-to-peer networks

Two from:

- Cheaper to set up
- Easy to share resources
- Easy to maintain

Give two disadvantages of peer-to-peer networks

Give two disadvantages of peer-to-peer networks

Two from:

- Peer-to-Peer networks can be used to contribute towards piracy
- Each computer has to be backed up independently